DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	GREAT HILL POND	Lake Area (ha):	27.52
Town:	TAMWORTH	Maximum depth (m):	3.0
County:	Carroll	Mean depth (m):	0.9
River Basin:	Saco	Volume (m^3):	250000
Latitude:	43°52'23" N	Relative depth:	0.5
Longitude:	71°20'34" W	Shore configuration:	1.45
Elevation (ft):	939	Areal water load (m/yr):	8.40
Shore length (m):	2700	Flushing rate (yr^{-1}):	9.20
Watershed area (ha):	412.9	P retention coeff.:	0.57
% watershed ponded:	0.3	Lake type:	natural

BIOLOGICAL:		19 January 1993	1 September 1992
DOM. PHYTOPLANKTON (% TOTAL)	#1	DINOBRYON 85%	CHRYSOSPHAERELLA 40%
	#2		UROGLENOPSIS 10%
	#3		PERIDINIUM 10%
PHYTOPLANKTON ABUNDANCE (cells/mL)			550
CHLOROPHYLL-A (µg/L)			9.12
DOM. ZOOPLANKTON (% TOTAL)	#1	CILIATE SPP. 42%	NAUPLIUS LARVA 27%
	#2	SYNCHAETA 27%	POLYARTHRA 15%
	#3		
ROTIFERS/LITER		103	79
MICROCRUSTACEA/LITER		37	102
ZOOPLANKTON ABUNDANCE (#/L)		243	190
VASCULAR PLANT ABUNDANCE			Abundant
SECCHI DISK TRANSPARENCY (m)			1.7
BOTTOM DISSOLVED OXYGEN (mg/L)		7.2	8.1
BACTERIA (E. coli, #/100 ml)	#1		4
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None
Hypolimnion volume (m^3) : None
Anoxic volume (m^3) : None

CHEMICAL:

Lake: GREAT HILL POND
Town: TAMWORTH

	19 January 1993		1 September 1992		
DEPTH (m)	1.0		1.0		3.0
pH (units)	5.8		6.3		6.3
A.N.C. (Alkalinity)	3.2		3.0		3.1
NITRATE NITROGEN	0.09		< 0.02		< 0.02
TOTAL KJELDAHL NITROGEN	0.17		0.25		0.29
TOTAL PHOSPHORUS	0.013		0.014		0.013
CONDUCTIVITY (μmhos/cm)	23.1		18.5		18.2
APPARENT COLOR (cpu)	55		75		76
MAGNESIUM			0.25		
CALCIUM			1.3		
SODIUM			1.4		
POTASSIUM			0.32		
CHLORIDE	< 3		< 3		< 3
SULFATE	3		2		2
TN : TP	20		18		22
CALCITE SATURATION INDEX			4.4		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1992

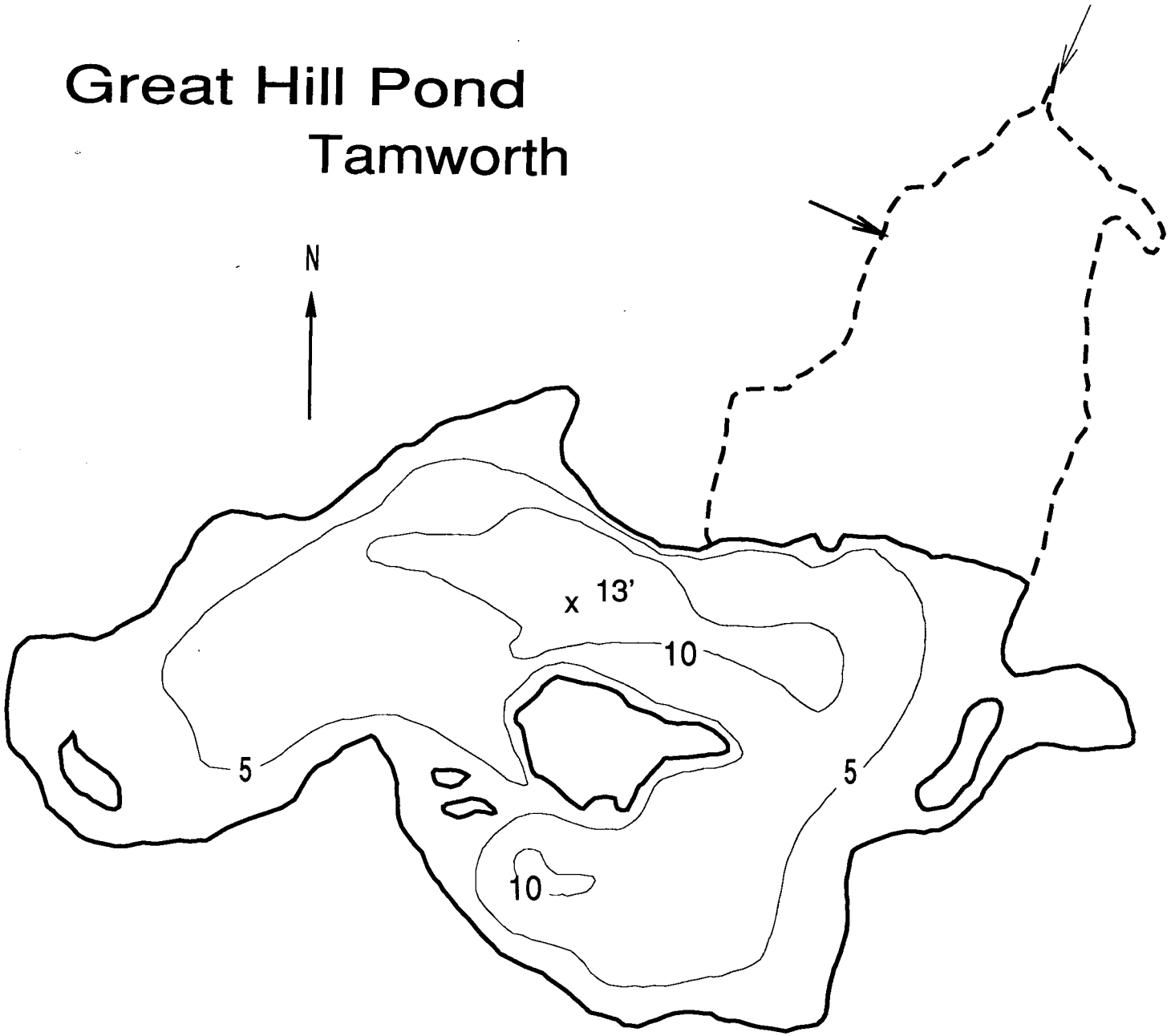
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	4	5	2	11	Eutro.

COMMENTS:

1. Sphaerocystis (35%) and Quadrigula (20%) were the dominant genera of wholewater phytoplankton. Dominant classes were greens (70%) and blue-greens (20%).

2. This pond was previously surveyed in 1987 and was rated mesotrophic at that time. Part of the change was due to a revised trophic classification system and part was due to a higher chlorophyll and a lower visibility reading in 1992.

Great Hill Pond
Tamworth



5 foot depth contours

0 0.3

Km

FIELD DATA SHEET

LAKE: GREAT HILL POND
TOWN: TAMWORTH
DATE: 09/01/92
WEATHER: SUNNY, BREEZY AND COOL

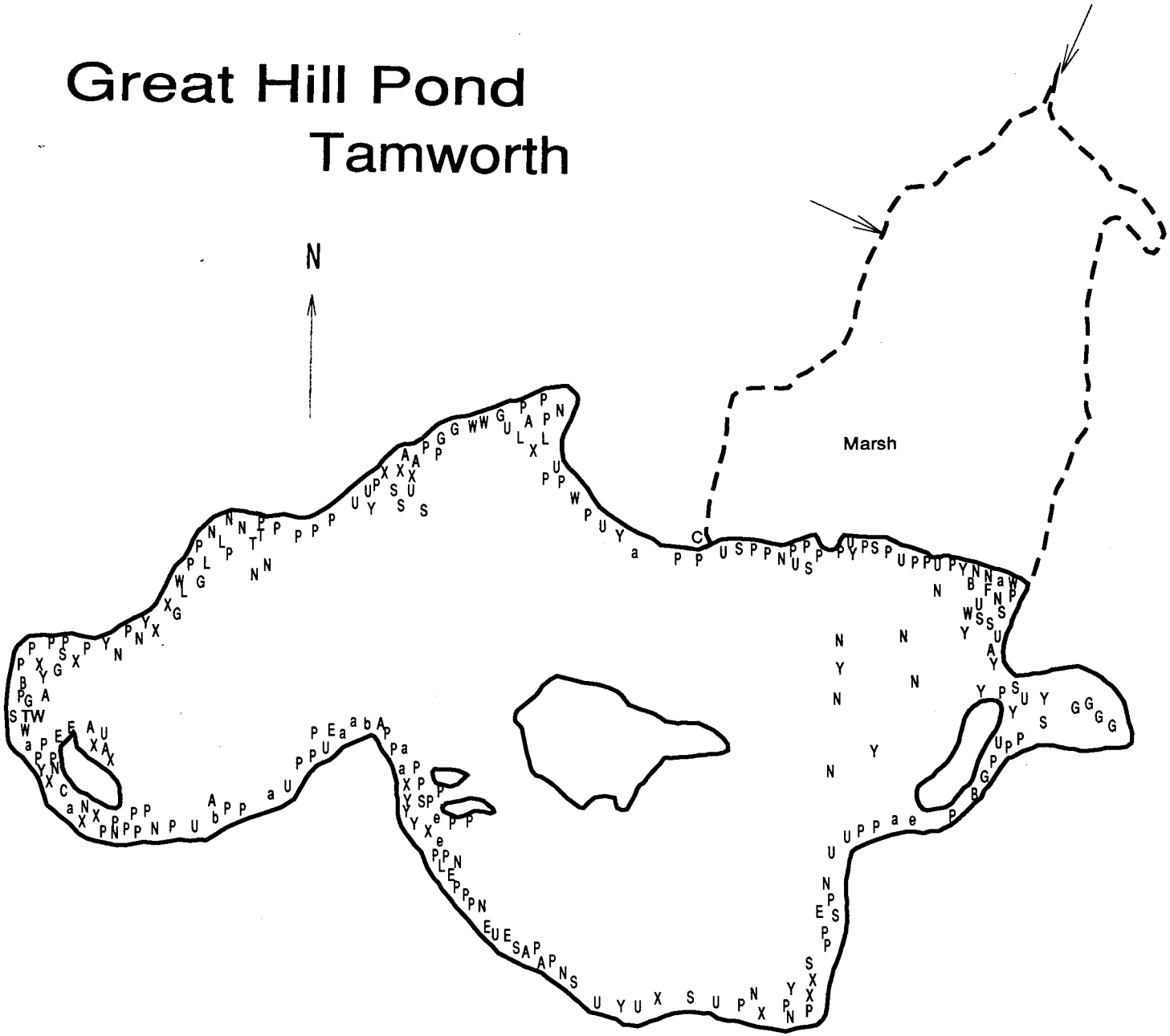
	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	20.2	8.4	92 %
	0.5	20.2	8.3	91 %
	1.0	20.2	8.3	91 %
	1.5	20.2	8.3	91 %
	2.0	20.2	8.3	91 %
	2.5	20.1	8.3	91 %
	3.0	20.0	8.1	89 %
	3.5	20.0	8.1	89 %

SECCHI DISK (m): 1.7
BOTTOM DEPTH (m): 4.0
TIME: 1330

COMMENTS:

*Dissolved oxygen values are in mg/L

Great Hill Pond
Tamworth



AQUATIC PLANT SURVEY

LAKE: GREAT HILL POND TOWN: TAMWORTH DATE: 09/01/92

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
U	Utricularia	Bladderwort	Common
S	Sparganium	Bur reed	Common
N	Nymphaea	White water lily	Scat/Common
Y	Nuphar	Yellow water lily	Scattered
e	Chamaedaphne calyculata	Leatherleaf	Abundant
P	Pontederia cordata	Pickerelweed	Common
A	Sagittaria	Arrowhead	Scattered
X		Sterile thread-like leaf	Scattered
G	Gramineae	Grass family	Abundant
W	Potamogeton	Pondweed	Sparse
B	Brasenia schreberi	Water shield	Sparse
T	Typha	Cattail	Scattered
d	Dulichium arundinaceum	Three-way sedge	Sparse
L	Lobelia dortmanna	Water lobelia	Sparse
E	Eriocaulon septangulare	Pipewort	Sparse
a	Peltandra virginica	Arrow arum	Scat/Common
b	Cyperaceae	non-flowering sedge	Sparse
C	Calla palustris	Water arum	Sparse

OVERALL ABUNDANCE: Abundant

GENERAL OBSERVATIONS:

1. A nice looking natural area--an open water marsh or weedy pond--with no development.
2. Leatherleaf was abundant around the shoreline; the pond had numerous floating bog islands of leatherleaf, sundew, pitcher plants, and grasses.
3. Both pink and white flowered varieties of Nymphaea were present.